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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, LE V

ART UNIT

PAPER NUMBER

2174

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,930

Applicant(s)

ERTEN ET AL.

Examiner

Le Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 10/2/03.
2. Claims 1-28 are pending in this application. Claims 1-2, 4-5, 11, 15, 17-20 and 22-25 have been amended. This action is made Final.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. Claims 1-3, 6, 8 and 10-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Filo et al. ("Filo", US 6,215,498 B1).

As per claim 1, Filo teaches a system for interacting with displays and all devices that use such displays comprised of:

- a) a display (col. 7, line 1 and lines 40-45);
- b) a sensor or camera (col. 9, lines 30-38);
- c) a pointing device remote from the sensor or camera and that can be viewed by the sensor or camera, wherein the sensor or camera operates independently from the pointing device (col. 7, lines 19-22 and lines 51-54; col. 9, lines 50-52);
- d) a method for detecting the pointing device (col. 7, lines 19-20); and
- e) a method for establishing the mapping between the position of the pointing device and a corresponding location on the display (col. 7, lines 17-19).

As per claim 2, Filo teaches a system for interacting with displays and all devices that use such displays wherein the sensor or camera, in addition to viewing the image of the pointing object, can also view at least one of (i) the image of the display and (ii) the reflection or effect that the pointing device can produce on the display and (iii) space around the pointing device (col. 11, lines 32-55; col. 13, lines 34-35 and lines 10-13, 15-16; col. 9, lines 49-50).

As per claims 3 and 8, Filo teaches a system for interacting with displays and all devices that use such displays which commands the positioning of a pointing icon on the display and wherein the pointing icon on the display can be registered by the sensor or camera (col. 9, line 56 through col. 10, line 22; col. 9, lines 48-50; col. 13, lines 32-34; col. 11, lines 32-36 and lines 40-43).

As per claim 6, Filo teaches a system for interacting with displays and all devices that use such displays wherein the pointing device is used to define a particular point or region on the display (col. 9, line 61 through col. 10, line 3).

As per claim 10, Filo teaches a system for interacting with displays and all devices which also includes at least one of the following (col. 9, line 49 through col. 10, line 22; col. 7, lines 40-49; col. 8, lines 10-21, 30-37; col. 11, lines 61-63; col. 13, lines 17-24; col. 14, lines 26-32):

- a) a method for selecting or highlighting a specific item or icon on the display;
- b) a method for activating a specific process, program, or menu item represented on the display; and
- c) a method for writing, scribing, drawing, highlighting, annotating, or otherwise producing marks on the display.

As per claim 11, Filo teaches a method for detecting the pointing device comprising the steps of:

a) retrieving of data or image from a sensor or camera, wherein the pointing device is remote from the sensor or camera (col. 13, lines 57-59); and

b) analyzing the data or image from the sensor or camera to locate the pointing device in the data, or locating at least a set of the picture elements in the image that comprise the rendition of the pointing device (col. 14, lines 6-7; col. 9, lines 50-52).

As per claim 12, Filo teaches a method for detecting the pointing device wherein characteristics that distinguish the pointing device from other objects in the data from the sensor or the image from the camera are known a priori (col. 19, lines 13-67; col. 9, lines 50-52).

As per claims 13 and 14, Filo teaches a method for detecting the pointing device wherein characteristics that distinguish the pointing device from other objects in the data from the sensor or the image from the camera are determined based on analysis of at least one set of the data acquired from the sensor or one image acquired from the camera and whose rendition are present in the data from the sensor or in the image from the camera is obtained by acquiring at least two sets of data from the sensor or at least two images from the camera, one with the pointing device in view of the sensor or the camera and one without, and comparing the two sets with one another (col. 14, lines 2-17; col. 9, lines 48-56).

As per claim 15, Filo teaches a method for detecting the pointing device wherein adjustments or modifications are made to the position, viewing angles, sensitivity, and other settings of the sensor or the camera pursuant the analysis of the data or image retrieved from the sensor or the camera (col. 17, lines 4-17; col. 9, lines 48-56).

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As per claim 16, Filo teaches a method for detecting a pointing device wherein at least part of the procedures for the method is carried out using at least in part the computing mechanism available on one or more of the following: the display, or the sensor or camera, or the pointing device, or the device producing the signal shown on the display, or the device producing the pointing icon on the display (figs. 1 and 2; col. 6, lines 6-66).

As per claim 17, Filo teaches a method for establishing a mapping between the set of positions that a pointing device can and assume in addressing a set of corresponding points on the display comprising the steps of defining the range of positions that the pointing device can assume, defining the boundaries of the positions that the pointing device can assume so that a virtual display space comprising (i) a continuous one-dimensional line, or (ii) a continuous two-dimensional plane, or (iii) a continuous three-dimensional volume is defined, defining the boundaries of the display so that a real display space comprising (i) a continuous one-dimensional line, or (ii) a continuous two-dimensional plane, or (iii) a continuous three-dimensional volume is defined, and warping the geometry of the real display space so that the real display space fits optimally within the boundaries of the virtual display space (figs. 7-11 and 13; col. 19, lines 13-67; col. 3, lines 38-42; *described is a method for creating a three dimensional world on a two dimensional display*).

As per claim 18, Filo teaches a method for establishing a mapping between the set of positions that a pointing device can and assume in addressing a set of corresponding points on the display wherein the boundaries of the set of positions that the pointing device can assume are obtained by querying the user to point to the boundaries (col. 12, lines 5-22).

As per claim 19, Filo teaches a method for establishing a mapping between the set of positions that a pointing device can and assume in addressing a set of corresponding points on the display wherein the boundaries of the set of positions that the pointing device can assume are obtained by contours or the periphery of the display as the display is viewed by the sensor or camera (col. 12, lines 5-22).

As per claim 20, Filo teaches a method for establishing a mapping between the set of positions that a pointing device can and assume in addressing a set of corresponding points on the display wherein at least one special display image is used for establishing the mapping between the set of positions that the pointing device can assume in addressing a set of corresponding points on the display (col. 12, lines 5-22).

As per claim 21, Filo teaches a method for establishing a mapping between the set of positions that a pointing device can and assume in addressing a set of corresponding points on the display wherein at least part of the procedures for the method is carried out using at least in part the computing mechanism available on one or more of the following: the display, or the sensor or camera, or the pointing device, or the device producing the signal shown on the display, or the device producing the pointing icon on the display (figs. 1 and 2; col. 6, lines 6-66).

Claim 22 is similar in scope to claim 11, with the exception that the method is for detecting a display perspective which is inherent when there is already a method for detecting the pointing device in an interactive virtual world environment, and is therefore rejected under similar rationale.

Claim 23 is similar in scope to claim 12 and is therefore rejected under similar rationale.

Claims 24 and 26 in combination is similar in scope to the combination of claims 13 and 14 and is therefore rejected under similar rationale.

As per claim 25, Filo teaches a method for detecting the pointing device wherein the display refers to a predetermined range of positions specified by the user that the pointing device can assume (col. 3, lines 38-42).

Claim 27 is similar in scope to claim 15 and is therefore rejected under similar rationale.

Claim 28 is similar in scope to claim 16 and is therefore rejected under similar rationale.

Claim Rejections - 35 USC § 103

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Filo et al. ("Filo", US 6,215,498 B1) in view of Edwards et al. ("Edwards", US 6,459,442 B1).

As per claim 7, Filo teaches a system for interacting with displays and all devices that use such displays comprising a pointing device for entering information into the system and can be used in conjunction with various software applications (col. 7, lines 46-54; col. 8, lines 16-35; col. 10, lines 24-31 and line 57; col. 13, lines 21-25; *information entered into the system further include a clipboard on which a user can draw*). Filo does not explicitly disclose the pointing device to be used to define a vector on the plane of the display that indicates a direction and magnitude relative to or with respect to an item on the display or a region of the display. Edwards teaches a system for interacting with displays wherein the pointing device to be used to define a vector on the plane of the display that indicates a direction and magnitude relative to or with respect to an item on the display or a region of the display (col. 8, lines 12-21). Therefore, it would have been obvious to an artisan at the time of the invention to include Edwards' teaching

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of a computer aided design tool, wherein the pointing device to be used to define a vector on the plane of the display that indicates a direction and magnitude relative to or with respect to an item on the display or a region of the display, to Filo's teaching of a system for interacting with displays that includes drawing capabilities to provide users with an environment capable of incorporating multiple applications and capabilities to enhance a user's individual task.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Filo et al. ("Filo", US 6,215,498 B1) in view of Applicant's Admitted prior art.

As per claim 9, although Filo teaches a system for interacting with displays and all devices that use such displays which also includes a method for sensing the pointing device's position relative to the position of a pointer icon on the display (col. 7, lines 1-19), Filo does not explicitly disclose the system to include a method for correcting the offsets between the position of the pointing device, or reflection, or effect thereof on the display as observed by the user or by the sensor or the camera, and the position of the pointer icon on the display. However, Applicant's admitted prior art teaches a system for interacting with displays and all devices that use such displays to include a method for correcting the offsets between the position of the pointing device, or reflection, or effect thereof on the display as observed by the user or by the sensor or the camera, and the position of the pointer icon on the display (page 21, lines 6-9). Therefore, it would have been obvious to an artisan at the time of the invention to include Applicant admitted prior art's teaching of a system for correcting the offsets between the position of the pointing device and the position of the pointer icon on the display to Filo's method of a system for sensing the pointing device's position relative to the position of a pointer icon on the

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display in order to reduce the margin of error concerning the position of the pointing device and the position of the pointer icon on the display.

7. Claim 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filo et al. ("Filo", US 6,215,498 B1).

As per claim 4, although Filo teaches a system for interacting with displays and all devices that use such displays wherein the pointing device is a part of the human body of a user such as a hand or a finger, or an ornament or device worn on the human body such as a glove or thimble, Filo does not explicitly disclose the sensor or camera being remote from the human body (figs. 2(A-B), 4, 5(A-B) and 11). Official Notice is given that sensors or camera being remote from the human body is well known in the art. Therefore, it would have been obvious to an artisan at the time of the invention to include sensors or camera being remote from the human body to Filo's teaching of sensors or cameras in order to provide users with an implementation preference.

As per claim 5, Filo teaches a system for interacting with displays and all devices that use such displays wherein the pointing device is used to point to regions of the display by way of changing its position, attitude, or presentation (col. 9, line 61 through col. 10, line 3).

Response to Arguments

8. Applicant's arguments with respect to claim 4 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments filed in Amendment A have been fully considered but they are not persuasive.

Applicant argued the following:

(a) Filo's movement of a pointer is not a consequence of the remote sensor viewing the pointing device.

(b) Filo does not teach the camera being used to determine the location of the pointing device.

(c) Filo does not teach a method for detecting a pointing device wherein the characteristics that distinguish the pointing device from other objects in the data from the sensor or the image from the camera are known at priori.

(d) Filo does not teach detecting changes in the scene to decide whether to record the next frame.

(e) Filo does not show or disclose any corrections to sensor or camera data acquisition parameters or viewing angles.

(f) Edwards does not teach image acquisition from the remote camera or sensor.

(g) Applicant's Admitted Prior Art does not show or disclose making corrections let alone detecting the icon or the pointing icon on the display.

The Examiner disagrees for the following reasons:

Per (a), in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., movement of a pointer is a consequence of the remote sensor viewing the pointing device) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Per (b), in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the camera being used to determine the location of the pointing device) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). However, the sensor or camera is able to view the pointing device when it is enabled and therefore is able to locate the pointing device in the data (col. 9, lines 50-52).

Per (c), Filo does teach a method for detecting the pointing device wherein characteristics that distinguish the pointing device from other objects in the data from the sensor or the image from the camera are known a priori (col. 19, lines 13-67; col. 9, lines 50-52).

Per (d), in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. detecting changes in the scene to decide whether to *record* the next frame) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Per (e), Filo does teach a method for detecting the pointing device wherein characteristics that distinguish the pointing device from other objects in the data from the sensor or the image from the camera are determined based on analysis of at least one set of the data acquired from the sensor or one image acquired from the camera and whose rendition are present in the data from the sensor or in the image from the camera is obtained by acquiring at least two sets of data

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from the sensor or at least two images from the camera, one with the pointing device in view of the sensor or the camera and one without, and comparing the two sets with one another (col. 14, lines 2-17; col. 9, lines 48-56; *the Virtual VCR makes an initial recording of the preconditions in the virtual environment and then only records the changes as they occur*).

Per (f), in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Filo teaches image acquisition from the remote camera or sensor (col. 11, lines 32-55; col. 13, lines 34-35 and lines 10-13, 15-16; col. 9, lines 49-50). The teachings extracted from Edwards was for the pointing device to be used to define a vector on the plane of a display that indicates a direction and magnitude relative to or with respect to an item on the display or a region of the display (col. 8, lines 12-21).

Per (g), in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Filo teaches detecting the icon or the pointing icon on the display (col. 9, lines 49-50). Applicant's Admitted Prior Art teaches "[a] variety of known methods, such as feedback control of the proportional (P)...can be used for the correction step".

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquires

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lê Nguyen whose telephone number is **(703) 305-7601**. The examiner can normally be reached on Monday - Friday from 5:30 am to 2:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid, can be reached on (703) 308-0640.

The fax numbers for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238 [After Final Communication]


(703) 872-9306 [Official Communication]

(703) 746-7240 [For status inquiries, Draft Communication]

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Lê Nguyen
Patent Examiner
December 22, 2003



SY D. ZUV
PRIMARY EXAMINER